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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/989,898	11/19/2001	Laurence M.C. Lai	11157.00	1341
26158	7590	05/10/2005	EXAMINER	
WOMBLE CARLYLE SANDRIDGE & RICE, PLLC P.O. BOX 7037 ATLANTA, GA 30357-0037			ALANKO, ANITA KAREN	
			ART UNIT	PAPER NUMBER
			1765	

DATE MAILED: 05/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/989,898	<b>Applicant(s)</b> LAI ET AL	
	<b>Examiner</b> Anita K. Alanko	<b>Art Unit</b> 1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on RCE 4/14/05.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 25-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/14/05</u> | 6) <input type="checkbox"/> Other: _____  |

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*[Handwritten signature]*

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on April 14, 2005 (an IDS) has been entered.

The allowability of claims 25-31 is withdrawn in view of newly cited Yamamoto et al (US 4,755,257).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 25 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al (US 4,755,257).

Yamamoto discloses a method comprising:

applying a first etch-resistant pattern 16 (e.g., on the top surface) to a first metal-containing layer 11 (top surface) of a web 12' (Fig. 2E'), the first metal-containing layer being disposed on a first surface (the top surface) of a substrate of the web, wherein at least a portion of the first pattern substantially defines a first part of the functional feature of the product unit;

applying a second etch-resistant pattern 16 (bottom surface) to a second metal-containing layer 11 (bottom surface) of the web 12' (Fig.2E'), the second metal-containing layer being disposed on a second surface (the bottom surface) of the substrate of the web, wherein at least a portion of the second pattern substantially defines a second part of the functional feature of the product unit;

exposing both sides of the web to a liquid etchant to effect removal of metal-containing material from areas of the web not protected by the first and second etch-resistant patterns (Fig.2F'; col.3, lines 23-27, 41-61) and

washing the etchant from the web ("rinsing", col.3, lines 32-33).

The structure shown in Figure 2G' is a singular functional feature of a product unit, and therefore anticipates the claimed invention.

As to claim 27, Yamamoto discloses to spray the etchant (col.3, lines 23-24).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Adachi et al (US 5,003,610) and Yamamoto et al (US 4,755,257).

Adachi discloses to provide a web 111 with etched, patterned metal features 112 (col.2, line 60) on both sides of the web (Fig.4). However, Adachi does not disclose how to etch.

Yamamoto teaches a useful method for forming patterned metal features on the top and bottom surfaces of a web by etching. The discussion of Yamamoto from above is repeated here. It would have been obvious to use the method of Yamamoto, including applying first and second etch-resistant patterns and etching by exposing both sides of the web to a liquid etchant, in the method of Adachi because Yamamoto teaches that this is a useful technique for forming metal patterns on opposite sides of a substrate.

As to claim 26, Yamamoto teaches that immersing a substrate in an acid is useful (col.4, lines 30-31). Examiner takes official notice that etchant baths are conventional. It would have been obvious to one with ordinary skill in the art to include in the exposing step continuously passing the web in an immersed condition through a bath of the liquid etchant in the modified method of Adachi because it is a conventional technique for etching and is useful for etching patterns.

Claims 25-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Adachi et al (US 5,003,610), Yamamoto et al (US 4,755,257), Gamzon (US 3,013,905) and Graham et al (GB 540542 A).

The discussion of modified Adachi from above is repeated here.

As to claim 28, Adachi does not disclose the composition of the metal-containing layer or the composition of its etchant. Gamzon teaches that aluminum is a useful material for metal-containing layers (col.4, lines 3-4), as used in the product of Adachi. It would have been obvious to one with ordinary skill in the art to use aluminum as the metal-containing layer in the method of Adachi because Gamzon teaches that it is a useful metal-layer for the products of Adachi.

However, Adachi and Gamzon do not teach the etchant for aluminum. Graham teaches that sodium hydroxide bath is a useful etchant for aluminum (page 1, lines 55-61). It would have been obvious to use a sodium hydroxide bath to continuously etch in the modified method of Adachi because Graham teaches that it is a useful etchant for aluminum.

As to claims 29-30, Adachi discloses to form equal thicknesses and symmetrical patterns (as shown in the figures; col.4, lines 21-25 "mirror symmetry").

As to claim 31, Adachi discloses to electrically connect in order to form a functional final product (electroacoustic transducer).

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Thoms (US 4,632,726) also discloses a method for demetallizing a web as in the context of claim 25.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K. Alanko whose telephone number is 571-272-1458. The examiner can normally be reached on Mon-Fri until 2:30 pm (Wed until 11:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1700.

Art Unit: 1765

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*Anita K. Alanko*

Anita K Alanko  
Primary Examiner  
Art Unit 1765